



1 Decay Scheme

In-111 disintegrates by > 99.99% electron capture via the excited level of 416.6 keV in Cd-111 and by < 0.01% electron capture via the isomer level in Cd-111 ($T_{1/2} = 48.5$ min) at 396.2 keV. Transitions to the ground state and the excited level of 245.4 keV in Cd-111 have not been observed.

L'indium 111 se désintègre par capture électronique (> 99,99%) vers le niveau excité de 416 keV et vers le niveau excité de 396 keV et de 48,5 min de période du cadmium 111. Aucune transition vers le niveau de 245 keV et le niveau fondamental n'a été observée.

2 Nuclear Data

$$T_{1/2}({}^{111}\text{In}) : 2,8049 \quad (4) \quad \text{d}$$

$$Q^+({}^{111}\text{In}) : 861,8 \quad (46) \quad \text{keV}$$

2.1 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,3}$	445 (5)	99,995 (5)	Allowed	5	0,8518 (2)	0,11835 (13)	0,02989 (4)
$\epsilon_{0,2}$	466 (5)	0,005 (5)	1st Forbidden	9	0,8524 (2)	0,1179 (2)	0,02975 (4)

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{2,1}(\text{Cd})$	150,81 (3)	0,005 (5)	E3	1,45 (3)	0,673 (14)	0,137 (3)	2,28 (5)
$\gamma_{3,1}(\text{Cd})$	171,28 (3)	99,995 (5)	M1 + 2 % E2	0,0897 (22)	0,0113 (3)	0,00217 (5)	0,1036 (24)
$\gamma_{1,0}(\text{Cd})$	245,35 (4)	100	E2	0,0524 (10)	0,00818 (16)	0,00159 (3)	0,0625 (7)

3 Atomic Data

3.1 Cd

ω_K	:	0,842	(4)
$\bar{\omega}_L$:	0,0632	(16)
n_{KL}	:	0,953	(4)

3.1.1 X Radiations

		Energy keV	Relative probability
X _K	K α_2	22,9843	53,17
	K α_1	23,1739	100
	K β_3	26,0615	}
	K β_1	26,0958	}
	K β_5''	26,304	}
			27,9
	K β_2	26,644	}
	K β_4	26,7106	}
		5,1	
X _L	L ℓ	2,77	
	L α	3,127 – 3,134	
	L η	2,957	
	L β	3,316 – 3,528	
	L γ	3,718 – 3,95	

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	18,675 – 19,636	100
KLX	21,923 – 23,172	43
KXY	25,171 – 26,028	4,63
Auger L	3,404 – 3,804	

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e _{AL}	(Cd)	3,404 - 3,804	100,5 (8)
e _{AK}	(Cd)		15,5 (4)
	KLL	18,675 - 19,636	}
	KLX	21,923 - 23,172	}
	KXY	25,171 - 26,028	}
ec _{3,1} K	(Cd)	144,57 (3)	8,13 (20)
ec _{3,1} L	(Cd)	167,3 - 167,7	1,02 (3)
ec _{3,1} M	(Cd)	170,51 - 170,88	0,197 (5)
ec _{1,0} K	(Cd)	218,64 (4)	4,93 (10)
ec _{1,0} L	(Cd)	241,33 - 241,81	0,770 (15)
ec _{1,0} M	(Cd)	244,58 - 244,95	0,150 (3)

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Cd)	2,77 — 3,95	6,78 (14)	
XK α_2	(Cd)	22,9843	23,65 (18)	} K α
XK α_1	(Cd)	23,1739	44,47 (26)	}
XK β_3	(Cd)	26,0615	}	
XK β_1	(Cd)	26,0958	}	K' β_1
XK β_5''	(Cd)	26,304	}	
XK β_2	(Cd)	26,644	}	
XK β_4	(Cd)	26,7106	}	K' β_2

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{2,1}$ (Cd)	150,81 (3)	0,0015 (15)
$\gamma_{3,1}$ (Cd)	171,28 (3)	90,61 (20)
$\gamma_{1,0}$ (Cd)	245,35 (4)	94,12 (6)

6 Main Production Modes

- { Cd – 112(p,2n)In – 111
Possible impurities : none
- { Cd – 111(p,n)In – 111
Possible impurities : In – 114m

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